

August 23, 1990

PRINCIPLES FOR COOPERATION BETWEEN THE  
GEOLOGICAL SURVEY OF CANADA  
AND THE  
ALBERTA GEOLOGICAL SURVEY

Whereas the Geological Survey of Canada (GSC) and the Alberta Geological Survey (AGS) have a continuing and complementary responsibility for developing a knowledge and understanding of the geology of Alberta; and

Whereas the GSC's programs and objectives are national in scope and commonly regional in scale, appropriately designed to establish fundamental geological frameworks and assess resources, geological hazards and environmental concerns; and

Whereas the AGS's programs and objectives are to provide, at an appropriate scale, geoscience data for the province in support of resource characterization and assessment, environmental assessment, and efficient and effective management of resource development; and

Whereas in support of these broad objectives, and on occasion in support of specific government need, the GSC and AGS conduct specialized site, process, or analytical studies at appropriate scales; and

Whereas the complementary nature of the work of these two organizations requires cooperation in program planning and implementation; therefore

The parties agree to the following principles for cooperation:

PRINCIPLES FOR COOPERATION IN PROGRAM PLANNING/IMPLEMENTATION

1. Formal cooperation should be based on the joint development of annual and long-term plans for geoscience in the province.
2. Such plans should be developed in the context of an integration, where appropriate, of national and provincial objectives and priorities.
3. This process requires meaningful participation by each agency in the advisory structure of the other.
4. All programs/projects will be reviewed within this framework with each agency retaining the right to proceed independently with projects that do not receive joint endorsement. Progress in all programs/projects of mutual interest will be jointly reviewed on an annual basis.
5. Consideration will be given to providing each agency with the opportunity to contribute to projects delivered by the other agency.
6. Consideration will be given to providing staff with job exchange opportunities between the two agencies. Job exchange opportunities may be of a short- or long-term nature.

Geological Survey of

Alberta Geological Survey

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E.A. Babcock, Assistant  
Deputy Minister  
Geological Survey  
of Canada

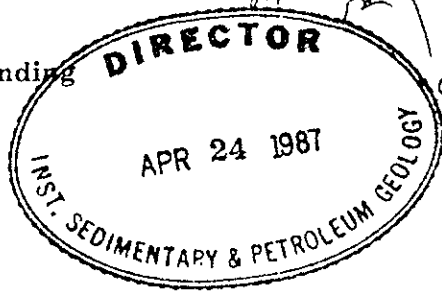
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R.J. Fessenden  
Vice-President  
Alberta Research  
Council

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M.J. Day, Assistant  
Deputy Minister  
Alberta Department  
of Energy

APPROVED PURSUANT TO THE ALBERTA DEPARTMENT OF  
FEDERAL AND INTERGOVERNMENTAL AFFAIRS ACT

\_\_\_\_\_  
Minister of Federal and Intergovernmental Affairs

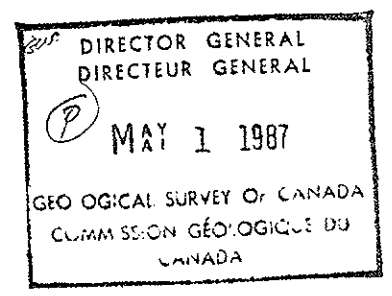
cc V. Lofferty (for info), GWC ; original RPR - PA  
K.H. Price  
R.W. Macquarrie  
D.G. Cook  
B.S. Najjar  
C.G. Smith  
R.M. Procter  
GS9140-30/9



Memorandum of Understanding

between

the Institute of Sedimentary and Petroleum Geology  
(hereinafter referred to as ISPG),  
a Division of the  
Geological Survey of Canada



of the Department of Energy, Mines and Resources of Canada

and

the Alberta Geological Survey  
(hereinafter referred to as the AGS)  
a Department of the Alberta Research Council

ISPG and AGS, desiring:

- to cooperate in joint investigations and scientific exchange on subjects of mutual interest;
- to consolidate the basis of an intensified scientific cooperation;

record their understanding and intention as follows:

Both institutions believe that their Peace River Arch research programs will benefit by cooperation on joint studies of subjects with which the two organizations are concerned, and in the exchange of information derived therefrom. This collaborative study by ISPG and AGS personnel is described by the following title:

**Peace River Arch Investigation  
Northwestern Alberta - Northeastern British Columbia**

## Article I

### Objective

The objective of this investigation is to increase the level of understanding of the nature, origin and geological history of the Peace River Arch, especially with regard to its formation and behaviour through time and its effect upon sedimentation, fluid flow, geothermal regime and oil and gas distribution in the region. Results of research designed to answer these questions will be presented in a joint AGS-GSC publication with a consistent geographic focus, format, and other conventions. It is essential that this publication be completed and available as soon as possible following submission of edited manuscripts. Possible formats for the publication will be a Geological Association of Canada Special Paper, a Canadian Society of Petroleum Geologists Memoir, or a co-sponsored Geological Survey of Canada Paper or Alberta Geological Survey Bulletin. The target date for completion of manuscripts is spring 1990, and it is anticipated that results of the study will be presented in a GAC or CSPG Symposium at that time.

## Article II

### Justification

Owing to the influence of the Arch, the Peace River area is one of the most highly prospective in the Western Canada Sedimentary Basin. Any significant advancement in our understanding of the feature has enormous economic implications and will certainly promote further oil and gas exploration and development in the area. It could also provide geological models for intracratonic arches in Canada and elsewhere.

The two research organizations, ISPG and AGS, are well situated to carry out the investigation. Together they constitute a unique pool of expertise and each has a mandate allowing for focussed, long-term investigations of this sort.

The results of such an endeavor are expected to be a landmark publication in multidisciplinary basin analysis that should achieve a high profile in private industry and the research community, and enhance the scientific reputations of AGS and ISPG.

### Article III

#### Benefits of Collaboration

1. Systematic study of a geological feature of great scientific and economic interest within the Western Canada Basin.
2. Opportunity to integrate:
  - a. regional system-by-system stratigraphic, paleogeographic, sedimentological and paleontological expertise and paleogeographic knowledge (ISPG, AGS);
  - b. regional subsurface time-slice maps of the Arch and environs (AGS);
  - c. regional paleogeological maps of levels of regional unconformities (AGS, ISPG);
  - d. organic geochemical expertise and approaches including source rock evaluation, maturation level, oil characterization, oil-source, oil-oil correlations, and burial history modelling (ISPG);
  - e. heat flow characteristics, and relationship to maturation levels and fluid flow (ISPG, AGS);
  - f. surface stratigraphic and structural attributes of the Arch in the Cordilleran Orogen of northeastern British Columbia (ISPG);
  - g. study of the present subsurface hydrogeological regime of the region: identification of hydrostratigraphic units including aquifers and aquitards: and estimation of paleohydrologic evolution of the region and relation to heat flow, maturation, oil migration/ trapping of hydrocarbons (AGS, ISPG); and
  - h. identification of crust/lithosphere character, delineation of component units and their geometry, and the bearing of present crust/lithosphere character on the origin and behaviour of the Arch through time (ISPG).
3. Opportunity to synthesize these diverse geological, geophysical and hydrogeological research results, providing an unsurpassed level of understanding of the Peace River Arch and environs.
4. Presentation of many of the results of these research activities within the covers of one volume, and at an appropriate symposium convened for the verbal release of these results.

## Article IV

### Work Plan and Budget

Each organization will determine and apply its respective Work Plans and Budgets in order to best achieve the stated objective, *viz.* by fulfilling their respective commitments, listed below. The Work Plan of each organization will, as a matter of course, be adjusted to reflect scientific and editorial needs.

## Article V

### ISPG Commitments

1. Creation of an independent project within ISPG known as the "Peace River Arch Project". The planning and research will be done in a formally recognized collaboration with the AGS.
2. Provision of time, facilities, support staff as necessary, and a high priority to research projects such that ISPG scientists can produce the following, by 1990:
  - a. contribution(s) on tectonics/basement/regional geophysics;
  - b. contributions on individual systems as appropriate, including at least Devonian, Carboniferous, Triassic and Cretaceous systems;
  - c. contribution(s) on the maturation level, organic geochemistry, petrography, source rock evaluation, and oil-source and oil-oil correlations of appropriate stratigraphic systems/ units;
  - d. contribution(s) on the thermal characteristics of the Arch and environs, and the bearing of present and paleothermal regimes and burial history on hydrocarbon maturation and migration;
  - e. petroleum studies investigating real and conceptual plays related to the geology and hydrogeology of the Peace River Arch (AGS, ISPG); and
  - f. contributions designed to synthesize geological, geophysical and hydrogeological research results, to provide an integrated overview of the Peace River Arch and environs (ISPG, AGS).
3. Agreement and provision of funds to enable ISPG investigators to attend semi-annual workshops, alternating between Calgary and Edmonton, of ISPG and AGS personnel.

4. Scientific co-editor.
5. Contribution to editorial/production services.
6. Financial commitment to production budget as necessary.

## Article VI

### AGS Commitments

1. Creation of an independent project within the Alberta Geological Survey known as the 'Peace River Arch Project'. The planning and research will be done in a formally recognized collaboration with the ISPG.
2. The provision of time, facilities, support staff as necessary, and a high priority to research projects such that AGS scientists can produce the following, by 1990:
  - a. the construction, from AGS data and in consultation with ISPG scientists, of a series of maps for each geological system developed in the Peace River region, showing its regional distribution and structure, and also that of its major component units;
  - b. detailed sedimentological and/or stratigraphic and structural studies of representative units within each of the three broad phases of Arch development:
    - i. the pre-Devonian and Devonian (uplift and Arch formation);
    - ii. the Carboniferous and Permian (Arch inversion and collapse);
    - iii. the Mesozoic (regional downwarping and basin formation);
  - c. determination of the present and paleo conditions of fluid and heat flow in the Peace River region with specific emphasis on regional petroleum exploration aspects. This will include basin reconstruction (AGS, ISPG); and
  - d. petroleum studies investigating real and conceptual plays related to the geology and hydrogeology of the Peace River Arch (AGS, ISPG).
  - e. contributions designed to synthesize geological, geophysical and hydrogeological research results, to provide an integrated overview of the Peace River Arch and environs (ISPG, AGS).

3. Agreement and provision of funds to enable AGS investigators to attend semi-annual workshops, alternating between Calgary and Edmonton, of ISPG and AGS personnel.
4. Scientific co-editor.
5. Contribution to editorial/production services.
6. Financial commitment to production budget as necessary.

## Article VII

### Joint Commitments

The collaborative project is proposed to begin in April 1987 with the first semi-annual workshop, involving scientists from both institutions. A provisional table of contents (with authors) is to be produced for distribution to all participants within two months of this workshop.

## Article VIII

### Entry into Force, Amendments, and Termination

This Memorandum of Understanding shall enter into force upon signature by both Parties and shall remain in force for three (3) years, unless extended by mutual agreement. This Memorandum of Understanding can be amended by mutual agreement in writing, and may be terminated at any time by either Party upon ninety (90) days written notice to the other Party. The termination of the Memorandum of Understanding shall not affect the validity or duration of projects which have been initiated under this Memorandum of Understanding prior to such termination.

Done at Calgary, this twenty-fourth day of April, 1987.

For the

Institute of Sedimentary  
and Petroleum Geology  
Geological Survey of Canada  
Department of Energy Mines and  
Resources

By: \_\_\_\_\_

Name: Dr. W.W. Nassichuk  
Title: Director, ISPG

For the

Alberta Geological Survey  
Alberta Research Council

By: \_\_\_\_\_

Name: Dr. J.A. Boon  
Title: Head, AGS